

WHAT IS CLAIMED IS:

1. A card slot assembly which has a card receiving portion for receiving a card in an insertion direction within the card slot assembly, the
5 card slot assembly comprising:

card ejector, which is movable along the insertion direction between a locked position and an ejecting position, wherein the card ejector moves to the locked position when the card is received within the card slot assembly, while the card ejector exerts on the received card an ejection
10 force in an ejection direction opposite to the insertion direction when the card ejector moves from the locked position to the ejecting position;

actuator, which is coupled to the card ejector and urges the card ejector to be positioned at the ejecting position;

a pivot;

15 a locking member, which is rotatably supported by the pivot, wherein a rotational range of the locking member is between a first rotational position and a second rotational position, the locking member locks the card ejector at the locked position when the locking member is positioned at the first rotational position, and the locking member unlocks
20 the card ejector when the locking member is positioned at the second rotational position, so as to allow the card ejector to move in the ejecting direction in accordance with the actuator;

a solenoid mechanism supporting a rod member movably in an axial direction of the rod member between a first rod position and a second
25 rod position; and

crank mechanism, which is coupled to the rod member and is positioned close to the locking member, wherein, when the rod member moves from the first rod position to the second rod position, the crank

mechanism converts the movement of the rod member into a rotation force and rotates the locking member from the first rotational position towards the second rotational position by means of the rotation force.

2. The card slot assembly according to claim 1, wherein: the rod member is provided with a groove, which is formed in the rod member and extends in a direction perpendicular to the axial direction; the crank mechanism comprises a main portion and an arm portion; the main portion has a center axis; the arm portion extends in an extending direction and is coupled to the main portion so that one end of the arm portion is able to pivot upon the center axis of the main portion; and the arm portion is provided with a projection, which projects in a projecting direction perpendicular to the extending direction and is fitted within the groove so that the projection is able to rotate and to slide within the groove and is able to pivot upon the center axis of the main portion when the rod member moves between the first and the second rod positions.

3. The card slot assembly according to claim 2, wherein: the locking member has a pressed portion; the crank mechanism further comprises a pressing portion, which is supported by the main portion apart from the center axis so that the pressing portion pivots upon the center axis of the main portion when the projection pivots upon the center axis; and the pressing portion is in contact with the pressed portion when the rod member is positioned at the first rod position, while the pressing portion presses the pressed portion when the rod member is moved towards the second rod position.

4. The card slot assembly according to claim 3, wherein the pressed portion and the pressing portion extend in the same direction as the projecting direction of the projection so that, when the pressing portion pivots upon the center axis, the pressing portion presses the pressed portion

in a direction perpendicular to the projecting direction.

5 5. The card slot assembly according to claim 1, further comprising compelling means for compelling the locking member to be positioned at the first rotational position so that, when the rod member moves from the first rod position to the second rod position, the crank mechanism supplies the rotation force on the locking member, opposing the compelling means.

10 6. The card slot assembly according to claim 1, wherein: the solenoid mechanism is provided with inciting means for inciting the rod member to be positioned at the first rod position; and, when the solenoid mechanism is turned on, the rod member moves to the second rod position, opposing the inciting means.

15 7. The card slot assembly according to claim 1, further comprising a base insulator, on which the card ejector, the pivot, the locking member, the solenoid mechanism and the crank mechanism are mounted, wherein: the base insulator is formed with a slit; the locking member is provided with a protrusion which is accommodated in the slit and is movable within the slit; and the protrusion and the slit restrict the rotation range of the locking member to a predetermined range which includes the first and the second rotational positions.

20 8. The card slot assembly according to claim 7, wherein: the base insulator has top and bottom surfaces and an opening between the top and the bottom surfaces; the card ejector, the pivot and the locking member are provided on the top surface, while the solenoid mechanism and the crank mechanism are provided on the bottom surface; and the locking member and the crank mechanism are accessible to each other through the opening.

25 9. The card slot assembly according to claim 1, wherein the axial direction of the rod member is the same direction as the insertion direction.

10. The card slot assembly according to claim 1, wherein: the card ejector comprises an ejection plate elongated in the insertion direction; the ejection plate has a first end and a second end which is nearer to the card receiving portion than the first end; and the ejection plate is provided with a
5 standing-wall portion which is formed at the first end and is laid on a plane perpendicular to the insertion direction so that, when the card is inserted into the card slot assembly, the standing-wall portion receives a force caused by the insertion of the card and moves the ejection plate to the locked position, while, when the ejection plate moves from the locked
10 position to the ejecting position, the standing-wall portion exerts the ejection force on the card.

11. The card slot assembly according to claim 1, wherein: the locking member is provided with a stopper portion, which is positioned away from the pivot and near to the card receiving portion and turns in
15 accordance with the movement of the locking member so that, when the card is received within the card slot assembly and the locking member is positioned at the first rotational position, the stopper portion is positioned nearer to the card receiving portion than the received card to prevent the card from going out of the card slot assembly.

20 12. The card slot assembly according to claim 1, further comprising a switch and a slider slidable along the insertion direction in accordance with the movement of the card being received within the card slot assembly, wherein the slider is provided with a control portion which turns on the switch when the card is completely received within the card slot
25 assembly and which turns off the switch when the card is ejected from the card slot assembly.

13. A method of using a card slot assembly comprising steps of:
installing the card slot assembly in an electronic instrument which

is able to access a card received within the card slot assembly;
detecting whether the card is accessed by the electronic instrument;
and

- in a case where the card is accessed by the electronic instrument,
- 5 forcing a solenoid mechanism supporting a rod member movably in an axial direction of the rod member between a first rod position and a second rod position to keep the rod member at the first rod position.